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Non-Social Play as a Risk Factor in Social and Emotional Development

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Non-Social Play as a Risk Factor in Social and Emotional Development

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In A. Goncu & E. Klein (Eds.), *Children in play, story, and school*. New York: Guilford Press.

Non-Social Play as a Risk Factor in Social and Emotional Development

Children spend much of their youthful energy engaged in play. Indeed, play, in its various forms, represents a serious business -- not only for the active participants, but also for students of the phenomenon. To many researchers, play is viewed as a generative force in children's social, emotional, and cognitive development (see Rubin, Fein, & Vandenberg, 1983; Saracho & Spodek, 1998; Fromberg & Bergen, 1998). The extent to which children engage in play with others is of added developmental significance. In light of the complexity and developmental significance of children's play and especially play with peers, it seems important to examine whether children who fail to engage others in social play are at risk for negative consequences.

The goal of this chapter is to examine the significance of social play in normative development, and the harmful consequences of non-social play. Specifically, we review research which has examined (1) the prevalence of social and non-social behaviors in early childhood; (2) individual and developmental differences in the expression of particular types of these behaviors; (3) those constructs or phenomena that predict, are correlated with, and are the putative consequences of particular forms of playful endeavor; and (4) various methods used to assess these behaviors.

Social and Non-Social Play

Given the focus of this chapter, we begin by outlining the role of social play in child development. In doing so, we admit to deviation from the norm in our defining that which we are labeling "play". That is, rather than viewing "play" in much the same manner as described by Rubin et al., (1983) in their chapter on 'Play' for the Handbook of Child Psychology, we focus on the social and non-social contexts within which particular play behaviors may occur. Thus, the

primary focus of our discussion centers on “social play” and/or the lack thereof. When observing children at play, a variety of structural components of play and levels of social participation can be seen. Both the structural components and the levels of social participation represent defining features of social play.

Structural Components of Play

Prior to discussing the social contexts of play, we first outline the structural components of play. The structural approach to the understanding and classification of children's play behaviors is drawn largely from the writings of Piaget in his book, 'Play, Dreams and Imitation in Childhood' (1962). In this volume, Piaget described a taxonomic model for the development of children's games. He distinguished three main types of ludic activities characterizing children's games -- namely, practice games, symbolic games, and games-with-rules. As well, he suggested that constructive games constituted "the transition from all three to adapted behaviors" (p. 110).

These structural categories of play were subsequently refined by Smilansky (1968). Smilansky suggested that the child moves naturally from one "stage" of play to the next "in keeping with his biological development" (Smilansky, 1968, p.5). The stages Smilansky described included: (1) Functional activities in which the same movements are repeated with or without objects. Children appear to engage in functional activities solely to gain pleasure from the performance of the behavior itself. (2) Constructive activities involve the building or creating of something. Behavior is sustained by constructive goals. In (3) Dramatic play there is some involvement of non-literality -- a symbolic transformation and production of decontextualized behaviors. Dramatic, or pretend play, allows the child to be many things at once; children can be themselves, actors, observers, and participators in a symbolic exercise. And finally, in (4)

Games-with-rules there is spontaneous acceptance of a division of labor, prearranged rules, and the adjustment to these rules.

According to Smilansky (1968), these four types of play develop in a relatively fixed sequence, with functional play appearing first in infancy, and games-with-rules last at about 6 or 7 years of age. It has been suggested that moving from functional play, to exploration, and finally to constructive and dramatic play, may allow the young child an opportunity to answer, in sequence, two important questions about objects. That is, opportunities to manipulate objects in a functional-sensorimotor fashion, and to explore these objects, may serve to answer the question "What do these things do?" (Hutt, 1970). Once the object-derived question has been answered, the child may pose the self-derived question, "What can I do with these things?" The answers come in the forms of exploratory/constructive and dramatic activities.

Social Participation

Children not only choose the types of play activities in which to engage, but also whether or not to participate with others in those activities. Perhaps the best known taxonomic description of the social contexts within which children play is drawn from the early research of Parten (1932). In her classic study, Parten described six categories of social participation. The first four categories comprised non-social or "semi"-social play activities, including (definitions are taken from Rubin's (1993) version of the Play Observation Scale):

- (1) Unoccupied behavior -- the demonstrated marked absence of focus or intent;
- (2) Onlooker behavior -- the observation of others' activities without attempting to join peers in play;

(3) Solitary play -- playing apart from the other children at a distance greater than three feet, or with her/his back to other children. During solitary play, the child plays with toys that are different from those the other children are using. The focal child is centered on his/her own activity, and pays little or no attention to others in the area;

(4) Parallel play -- the child plays independently; however the activity often, though not necessarily, brings him/her within three feet of other children. The child plays beside, or in the company of other children, but not with his/her companions.

Parten (1932) also defined two categories of socially interactive play.

(5) During Associative play, the child interacts with other children and may be using similar materials, however, there is no real cooperation or division of labor.

(6) Cooperative play consists of a group activity organized for the purpose of carrying out some plan of action or attaining some goal. Play partners coordinate their behaviors and take particular roles in pursuit of the common goal. In studies postdating the 1970s, both associative and cooperative play have been combined as social play for purposes of obtaining adequate inter-observer reliability. (e.g., Rubin, Maioni, & Hornung, 1976; Rubin, Watson, & Jambor, 1978).

The Developmental Significance of Social Play

Theoretical perspectives. In development, both the structural and social aspects of play have significance for children. Thus, having provided a definition of both the structural components and distinctions in social play, we can now address the issue of its developmental significance. For young children, social play provides an important and unique context within which cognitive and social skills may be acquired and practiced (Goldman, 1998).

Piaget and play. To Piaget (1962), play represented the functional invariant, assimilation, in its purest form. Whilst assimilating, children incorporate events, objects, or situations into existing ways of thinking. Thus, as "pure assimilation", play was not considered an avenue to cognitive growth, but rather as a reflection of the child's present level of cognitive development.

According to Piaget, it was through the 'functional exercise' of practice play (e.g., clapping hands), that children came to acquire and hone the basic motor skills inherent in their everyday activities. In contrast with practice play, during which actions are exercised and elaborated for their functional value, symbolic play (that is, pretense) allowed the exercise of actions for their representational value. Games-with-rules necessarily incorporate social coordination and a basic understanding of social relationships. In the case of games, rules and regulations are imposed by the group, and the overriding structure results from collective organization.

Piaget not only believed that the structural components of play were developmentally important, but that the social aspects of play were significant facilitators of developmental change. For example, he believed that interpersonal conflict naturally resulted from social interaction. Interpersonal conflict incurs developmental change because differences in opinion provoke cognitive disequilibria that are sufficiently discomfiting so as to elicit attempts at resolution through the exchange of ideas, thoughts and beliefs, and negotiation. As a result, children experience socio-cognitive gains. In sum, play allows children to engage their physical and social surroundings in an attempt to find out how these environments 'work'.

Vygotsky and play. Like Piaget, Vygotsky's (1967) discussion of play was framed within a larger psychological theory of children's cognition. Vygotsky argued that children used symbolic play as an essential link between abstract meanings and their associated concrete entities.

Repetitive symbolic play was useful in allowing the child to conceive of meanings independently of the objects that they may represent. For example, a young child gains experience in understanding the abstract meaning of the concept of car by pretending that a wooden block is a car, and “driving it” around the room. Thus, play provided children with a self-controlled context within which they could explore the relations between words, names, objects, and concepts.

Mead and peer play. Mead (1934) stressed the significance of playful peer interaction for the development of the self-system. He believed that children developed notions about the self through the behaviors directed at them, proactively and reactively, by their peers. Thus, exchanges among peers, in the contexts of cooperation, competition, conflict, and friendly discussion, allowed the child to gain an understanding of the self as both subject and object. In this regard, Mead proposed that peer interactions were not only an important factor in the evolution of social perspective-taking skills, but also in the development of the self-system.

Other theories of play. Finally, other theoretical accounts have focused on the cognitive, linguistic, and emotional advances promoted by children’s play. For example, cognitive theorists have demonstrated the role that play, particularly pretend play, has in the development of a theory of mind (e.g., Astington, Harris, & Olson, 1988; Lillard, 1993; 1998). A child’s theory of mind is the understanding that people have mental states (e.g., feelings, desires, beliefs, intentions) and that these states underlie and help to explain their behavior (Sigelman, 1999). This understanding about one’s own mental states (i.e., mind) and those of others, takes the form of a theory in that it makes certain ontological distinctions, has a causal-explanatory framework, and defines its constructs vis-à-vis other constructs in the theory (Wellman, 1990). As children explore their social and physical world through play, they encounter new information that leads them to revise

their 'theories'. In particular, pretend play with others provides opportunities to build and expand mental representations by requiring pretenders to (a) negotiate (e.g., decide the topic of and roles within the pretend play), (b) reconcile conflicting views, (c) take on different perspectives (e.g., the role of the character being played), and (d) act out emotional situations (Lillard, 1998). Thus, play presents the setting for children to expand their understanding of their own mental states and those of others.

Play allows the individual to explore new combinations of behaviors and ideas within a psychologically safe milieu. Through play, children develop behavioral 'prototypes' that may be used subsequently in more 'serious' contexts. Children's play fosters creativity and flexibility (e.g., Bruner, 1972).

Linguists have proposed ways in which play may help children perfect newly acquired language skills and increase conscious awareness of linguistic rules. Play provides a superior context within which children may gain valuable language practice as they experiment with the meaning, structure, and function of language. For example, children may use old words in unique ways when they need to describe something, or invent new word forms as they subconsciously begin to learn about past tense and plurals. Children eventually learn the exceptions to these rules, but through playing with different forms, they begin to better understand how language works (Davidson, 1998; Garvey, 1974). Play conversations also work to improve communication skills. These skills, in turn, are important components of many of the developmental acquisitions attained during childhood, particularly narrative representation, social cognition, intersubjectivity, and fantasy play (Sawyer, 1997).

Sawyer (1997) has proposed an improvisational model of children's interactions during play, which allows for the conceptualization of how children act strategically during turn-taking in an interactional sequence. The play episode allows for the opportunity for innovation, while at the same time provides rules and constraints vis-a-vis the prior flow of the play drama. Goncu (1993a, 1993b) has suggested that the improvisational processes typical of social pretend play are critical to the development of intersubjectivity (i.e., two participants arriving at a mutual understanding). These processes prepare children for an ever increasingly complex social life within which a variety of interactional contexts exist, that range from more ritualized and structured to more improvisational. (Sawyer, 1996).

Lastly, Fein (1989) has suggested that children pretend in an effort to reconstruct and gain mastery over emotionally arousing experiences. When children come to realize that others have similar emotional regulatory needs and that others (peers) share with them similar emotion arousing experiences, they begin to direct their pretense activities to peers. Just as with other skills discussed above, by engaging in pretend play with others, children are able to practice regulatory skills. For example, children are able to learn how to keep play interactions at an affectively tolerable level so that the interchange does not become so emotionally intense that play is disrupted or so emotionally low in intensity that play ceases due to boredom. Thus, play provides a 'safe' milieu in which a child can experience emotions and practice regulatory skills.

In summary, many theorists have posited that social play provides a setting within which children may explore their physical and social worlds. In turn, this exploration promotes cognitive, language, social, and emotional mastery. Further, through the repeated social interaction afforded by play, children learn important lessons about themselves as well as others.

Empirical support. Researchers have provided strong support for the theoretical perspectives noted above. For example, with regard to cognitive development, Pepler (1982) found that children (three to five year-olds) who engaged frequently in sociodramatic and constructive play performed better on tests of intelligence than their age-mates who were more inclined to play in a sensorimotor fashion. Similarly, it has been reported that training children to engage in sociodramatic (group make-believe) play improves children's IQ scores, and the effects are relatively long lasting (Smith, Dalglish, & Herzmark, 1981). In general, sociodramatic play appears to be an important factor contributing to the development of (a) oral language and vocabulary (see Shore, 1998 for a review); (b) story production, story comprehension, communication of meaning, and the development of literacy (Christie & Enz, 1992; Christie, 1998; Roskos & Neuman, 1998; Christie, 1991) and subsequent reading and writing achievement (Dickinson & Moreton, 1991; Galda, Pellegrini, & Cox, 1989); (c) the ability to do tasks of mental representation (Youngblade & Dunn, 1995); and (d) mathematical thinking (see Jarrell, 1998).

Insofar as social development is concerned, results from various studies indicate that sociodramatic play among preschoolers is associated with interpersonal problem-solving skills, social competence, and perspective-taking skills (Doyle & Connolly, 1989; see Nourot, 1998; Rubin, et al., 1983 for reviews). Further, preschoolers who engage in more interactive/cooperative play, versus non-interactive play, are better liked by their peers (Black & Hazen, 1990; Ladd & Price, 1993; Ladd, Price, & Hart, 1988; 1990).

During middle childhood, pretend play allows children to reveal to peers, their secrets, emotions, ambitions, and intentions (Rubin & Coplan, 1994). Consequently, it is no wonder that

sociodramatic play in the company of peers is considered a "marker" of social competence in early and middle childhood (e.g., Howes, 1988; 1992).

It should be noted that many of the empirical studies described above which suggest the developmental significance of play are correlational in nature. There has been, however, a fair amount of experimental research that directly examines the developmental significance of play. Of particular importance are studies in which play training methods have been studied. The play training method involves systematically coaching children to engage in greater amounts of sociodramatic play. Manipulation of play behaviors can be associated with future measures of social skills to determine whether or not increases in play behaviors contribute to social or cognitive competence. In studies of this kind, concerted attempts to encourage social pretend play has led to increases in children's sociodramatic play with peers (e.g., Connolly, 1980; Saltz, Dixon, & Johnson, 1977; Smilansky, 1968). In addition, children coached in fantasy play do indeed show improvements in perspective taking, social problem-solving, and group cooperation (Rosen, 1974; Saltz & Johnson, 1974; Smith & Syddall, 1978).

Using play training methods, researchers have found that play is not only related to interpersonal social skills, but cognitive advances as well. For example, Vukelick (1995) examined the effects of exposure to print and interaction with a more knowledgeable other on kindergarten children's environmental print knowledge. Three school classes were randomly assigned exposure to: 1) print during play in print-enriched settings; 2) exposure to print and functional experiences with a more knowledgeable other during play in print-enriched settings; 3) and play in non-enriched settings. Prior to and following three weeks of play in each of settings, ability to read the environmental print appropriate to each setting was assessed in-context with

words embedded in their supporting context and out-of-context with words written on a list.

Results indicated that exposure to the print and functional experiences with a more knowledgeable other around this print, significantly influenced the children's ability to read environmental print on both reading tasks, especially in a play setting.

In another study, Williamson (1992) examined the effects of play training on story comprehension among older primary children who were identified as poor comprehenders. Recall ability was assessed before and after play training and revealed that the reenactment of stories for subgroups of older primary children was effective in facilitating story comprehension.

The examples noted above represent just a few supportive arguments for the developmental significance of social play. In general, these experimental studies suggest that play is a powerful precursor to children's social and cognitive developmental progress, and a useful tool in intervention. Given such research support, there is reason for concern for children who do not engage in this growth-promoting behavior. We turn now to a discussion of non-social play, including its various forms, meanings, and consequences.

Non-Social Play in Childhood

If social interaction or social participation is advantageous for children (e.g., Piaget, 1962), it would appear logical to assume that the lack of social interaction should prove troublesome. Recently, this latter belief has become mainstream among those who have suggested that shy or socially withdrawn children are "at risk" for later maladaptation. In fact, it is now widely accepted that children who consistently experience an impoverished quality of peer interaction during the early and middle childhood years may be 'at risk' for later social and emotional problems in

adolescence and adulthood. These problems include school dropout, delinquency, aggression, depression, low self-esteem, and loneliness (see Rubin, Bukowski, & Parker, 1998, for a review).

But what precisely happens when children spend their time alone? Researchers have traditionally not distinguished between the variety of behaviors that children can display when playing alone when in social groupings of other peers. For the most part, the terms “behavioral solitude”, “social withdrawal”, and “nonsocial play” have been used interchangeably to connote a wide variety of underlying mechanisms. However, recent research has revealed the importance of identifying qualitatively different types of non-social behavior.

The multiple forms of non-social play behaviors. In the early 1980s, Rubin (1982) distinguished between two clusters of solitary behaviors that children may engage in; he labeled these solitary-passive and solitary-active behaviors. Solitary-passive behavior comprises the quiescent exploration of objects and/or constructive activity while playing alone. Solitary-active behavior is characterized by repeated sensorimotor actions with or without objects and/or by solitary dramatizing. Put in terms of the previously described work of Piaget (1962) and Smilansky (1968), the former construct comprises constructive or exploratory activity; the latter comprises sensorimotor or functional play whilst alone. Importantly, “alone” means playing in solitude when among peers (in a classroom or on a playground).

A third cluster of solitary behaviors, reticence, consisting of prolonged looking at the partner without accompanying play (onlooking behavior), and being unoccupied was described by Coplan, Rubin, Fox, Calkins, & Stewart (1994). Various studies have been conducted to examine the predictors, correlates, and consequences of these three forms of non-social behavior.

The different “meanings” of non-social play. With the identification of the three above-mentioned forms of solitude, researchers began to ask the question: Is the frequent display of all forms of non-social play in early childhood "necessarily evil?" (Rubin, 1982). It has long been believed that the frequent production of solitary behavior, while in the presence of peers, reflects developmental immaturity, a deficiency in social skills, an inability to regulate fearful, wary emotions, and/or other aspects of psychological maladaptation (e.g., Parten, 1932; Barnes, 1971). It is now rather clear that non-social play is a complex and multidimensional construct. Recent advances in the study of social withdrawal have produced a literature suggesting that different expressional forms of solitude carry with them different psychological meanings (see Rubin & Stewart, 1996 for an extensive review). Moreover, as we discuss below, these underlying psychological mechanisms appear to change as a function of age.

Solitary-passive behavior. In early childhood, solitary-passive behavior is associated positively with (a) competent problem solving whilst alone or in cooperative tasks with peers, (b) peer acceptance, and (c) indices of emotion regulation (Coplan et al., 1994; Coplan & Rubin, 1998; Rubin, 1982; Rubin, Coplan, Fox, & Calkins, 1995). In addition, such behavior is reinforced positively by teachers and parents as well as peers. Preschool children who frequently engage in solitary-passive play (e.g., doing puzzles or artwork, building blocks or reading) appear to be object-oriented rather than people-oriented. These children excel at object-oriented tasks, are more task persistent, and have a higher attention span (Coplan, 1995). On the other hand, they perform poorly during people-oriented social tasks (e.g., "show and tell" during small group time) (Coplan & Rubin, 1998). Generally then, solitary-passive play among preschoolers is not associated with indices of maladaptation.

In attempting to provide an etiological explanation for children's frequent production of solitary-passive play, researchers have mentioned the possibility that the children who engage in high frequencies of this activity are relatively disinterested in social engagement and have low approach and low avoidance motivations (Asendorpf, 1991, Rubin & Asendorpf, 1993). To the extent that such an explanation would not be suggestive of high risk status for "solitary-passive" children, it is not surprising that Rubin and colleagues (Rubin et al., 1995) recently reported that non-social, but emotionally regulated children were more likely to display solitary-passive behavior when engaged in solitary activities, as compared to any other form of non-social behavior.

It has been suggested that solitary-constructive and -exploratory play are encouraged by preschool teachers because they maintain order in the class and closely approximate the kinds of behavior generally occurring in elementary school classrooms.

Solitary-active behavior. Solitary-active behavior, when produced in a social group, is characterized by repeated sensorimotor actions with or without objects and/or by solitary dramatizing. It is important to distinguish solitary-active behavior from two other types of dramatic play: (1) dramatic play when the child is alone, and (2) sociodramatic play in the presence of peers. The former is quite normal for young children, and the latter, as discussed previously, is a marker of social competence (e.g., Howes, 1992).

The extremely low frequency of occurrence of this form of play makes it very difficult to study without the use of extensive observational periods. However, its infrequent enactment makes this form of play a highly salient and noticeable form of in-class behavior; as such, it is regarded by peers and teachers alike as rather peculiar. The cluster of behaviors comprising

solitary-active play has been associated with indices of (a) impulsivity among preschoolers (Coplan et al., 1994; Rubin, 1982), (b) peer rejection from as early as the preschool years, and (c) externalizing problems (in particular aggressiveness) and immaturity throughout the childhood years (Coplan & Rubin, 1998; Rubin, 1982). Thus, solitary-active behavior, although non-social in nature, appears to be associated with externalizing, as opposed to internalizing problems, in childhood. High frequencies of solitary-functional (sensorimotor) and solitary-dramatic play in preschoolers are negatively related to observations of positive peer interactions and the receipt of social initiations from peers (Rubin, 1982). Even in mid-childhood, solitary-active behavior remains significantly associated with teacher and peer derived indices of aggression (Rubin & Mills, 1988).

Rubin, LeMare, and Lollis (1990) have suggested that whereas some children may voluntarily withdraw from peer interaction, others may, in fact, be actively isolated by the peer group. This may be the case for those children who engage in a high frequency of solitary-active behaviors. Ameliorative action would thus be appropriate when it is noted that a child's activities are dominated by this form of non-social activity.

Reticent behavior. The third cluster of solitary behaviors, "reticence", may be identified by the frequent production of prolonged watching of other children without accompanying play (onlooking), or being unoccupied (Asendorpf, 1991; Coplan et al., 1994). Reticent behavior is believed to reflect social fear and anxiety in a social context; preschool-age children who are often reticent are thought to experience what has been termed a social "approach-avoidance" conflict (Asendorpf, 1990, 1991). That is, while desirous of peer interaction (high approach motivation),

these children find that entering social situations elicits feelings of anxiety and the development of a powerful need to avoid interaction (high avoidance motivation).

It is normal for most children to experience this conflict, to some extent, in the presence of unfamiliar peers. The resolution of this conflict usually involves the movement from onlooking to hovering near the social interactors of interest, to parallel play, and then finally to social interchange (Bakeman & Brownlee, 1980). However, children who are extremely inhibited in the presence of unfamiliar peers do not make this progression, and because of their felt anxiety, display prolonged onlooking of other peers without accompanying play and/or unoccupied behaviors. For example, Coplan et al. (1994) found a significant relation between reticent behavior and hovering in four-year-olds. Reticence was also associated with overt indications of anxiety (e.g., crying, and automanipulatives such as digit sucking and hair pulling) as well as maternal ratings of shyness (Coplan & Rubin, 1998). Further, reticence is highly stable across situations.

For example, children who are reticent during free play, also display high frequencies of onlooking and unoccupied behaviors during situations requiring task completion or self presentation (Coplan & Rubin, 1993; Coplan et al., 1994). As well, there is a higher incidence of internalizing problems reported for children who exhibit a high frequency of reticent behavior both in the laboratory (Schmidt, Fox, Rubin, Sternberg, Gold, Smith, & Schulkin, 1997) and in preschool classroom (Coplan & Rubin, 1998) free play settings.

Representative Methods of Assessing Social and Non-Social Play.

In the attempt to study children's behaviors including social and non-social play, researchers have relied on several sources of information concerning the nature of these behaviors,

including direct behavioral observations, teachers and children's peers. In the section that follows, we present several of these methods as well as the advantages and disadvantages associated with their use.

Observational Taxonomies.

Observational techniques involve the systematic recording of children's play behaviors. There are several advantages of observational techniques. First, the behaviors observed are "face valid". Second, 'blinded' observers reduce biases in the coding process. That is, coders are not influenced by their past knowledge of a child's behaviors. Third, coders can be trained to observe and record very specific and detailed behaviors.

Disadvantages include the following: (a) Observational assessments are both time and labor-intensive; (b) children may behave in atypical manners when aware that they are being observed; (c) observers are typically exposed only to restricted samples of behavior that are gathered during limited time intervals in limited contexts; and (d) infrequently occurring but salient events such as disruptive behavior may be missed between time sampling intervals. Despite these weaknesses, the breadth and depth of behavior that can be observed without problems of bias, recall, and accuracy makes observational techniques particularly useful. Furthermore, wireless transmission systems, hidden cameras with running video logs, and other methodological advances in both time- and event-sampling techniques have increased the 'generalizability' of direct observational techniques.

There currently exist several observational coding schemes designed to assess social play and its related constructs (Bergen, 1988; Fewell & Glick, 1998; Pellegrini, 1998). The social aspects of children's play have been investigated using time sampling (e.g., Ladd & Price, 1993;

1985; Rubin, 1989); event samples (e.g., Pettit & Harrist, 1993); and scan samples (e.g., Hart, DeWolf, & Burts, 1993; McNeilly-Choque, Hart, Robinson, Nelson, & Olsen, 1996). These coding schemes have been employed to observe social play in the classroom (e.g., Rubin, 1982, Rubin & Maioni, 1975; Rubin et al., 1976; 1978), on the playground (e.g., see Hart, et al., 1993; McNeilly-Choque, et al., 1996; Pellegrini, 1995), and in the home with adults (e.g., Pettit & Bates, 1990). In our work, we have made frequent use of the Play Observation Scale (POS), (Rubin, 1989). This measure is described in greater detail below as an example of an observational taxonomy used in the study of play.

The Play Observation Scale (POS). The POS, (Rubin, 1989) is an observational taxonomy designed to assess the structural components of children's play nested within social participation categories. Accordingly, the POS employs a time sampling methodology within which 10 second segments are coded for both social participation (e.g., solitary, parallel, group) and the cognitive quality of children's play (e.g., functional-sensorimotor, constructive, dramatic). Several additional free play behaviors are assessed, including instances of unoccupied behavior, onlooking, exploration, peer conversation, anxious behaviors, hovering, transitional behavior, rough-and-tumble play, and aggression. The POS coding taxonomy is illustrated in Figure 1.

-----insert **Figure 1** about here-----

The use of the POS in our laboratory (e.g., Coplan et al., 1994; Fox, Rubin, Calkins, Marshall, Coplan, Porges, Long & Stewart, 1995; Rubin et al., 1995) and in many others (e.g., Guralnick,

Conner, Hammond, Gottman, & Kinnish, 1996; Guralnick, Gottman, Hammond, 1996; Minnett, Clark, & Wilson, 1994; Asendorpf, 1990; Malone & Stoneman, 1990; Baudonniere, 1988; Guralnick & Groom, 1987, 1988; Roopnarine, & Johnson, 1987; Tout, de Haan, Campbell, & Gunnar, 1998) has allowed for a clearer understanding, not only of children's social play behaviors, but also of developmental (e.g., Rubin, 1993), contextual (e.g., Minnett et al., 1994; Asendorpf, 1990; Guralnick & Groom, 1988; Einslein & Fein, 1981), sex (e.g., Moller, Hymel, & Rubin, 1992; Johnson, & Ershler, 1981), and temperamental (e.g., Coplan & Rubin, 1998) differences. Further, numerous studies have been conducted in which correlates of the various POS categories of play have been examined (e.g., Hymel, Rubin, Rowden, & LeMare, 1990). Recently, the POS has been used extensively in studies of children with disabilities and disorders (e.g., Guralnick et al., 1996; Minnett, et al., 1994; Malone & Stoneman, 1990).

Outside Source Assessments.

Outside source assessment procedures involve asking "expert" informants, such as peers, parents, and teachers, to rate or nominate children's social participatory inclinations. There are several general advantages to using 'paper-and-pencil' rating scales or nomination techniques. To begin with, outside source assessment is comparatively quick and inexpensive. As well, parents, classmates, and teachers have the potential to observe children in many different circumstances and for long periods of time; thus, they can make inferences about specific children's "everyday" behaviors. The following are more specific advantages, as well as disadvantages, associated with each respective informant.

Teacher measures. Researchers often ask teachers to rate the frequency with which children engage in particular behaviors. There are numerous advantages associated with using

teachers as informants. First, as noted above, because teachers are not members of peer group networks, and see behaviors in a variety of school contexts, they are in a better position to provide objective information about specific children's "everyday" behaviors (Coie & Dodge, 1988). Second, the collection of teacher data is comparatively quick and inexpensive. Finally, in special relation to the study of non-social behaviors, teachers, compared to young children's peer ratings, may be more adept and accurate at identifying children who engage in less salient behaviors such as withdrawal (e.g., Ladd & Mars, 1986; Younger, Schwartzman, & Ledingham, 1985).

Despite these advantages, it may well be that teachers do not always perceive behavior in the same ways as peers and neutral observers. For instance, in light of possible child behavior changes over the course of a school year, teachers may retain early-year perceptions of a child's behavior and thus may not be totally accurate in their assessments. Teachers are also likely to be less accurate in estimating frequencies or rates of behavior when compared with observers. Finally, potential confounds may exist in teacher ratings due to gender or relational biases (cf. Coie, Dodge, & Kupersmidt, 1990; Rubin, Coplan, Nelson, Cheah, & Lagace-Seguin, 1998; Ladd & Profilet, 1996).

It should be noted that there are few, if any, teacher measures that directly assess children's social play. One exception is the *Preschool Play Behavior Scale* (Coplan & Rubin, 1998). This measure was designed specifically to assess social play, solitary-passive behaviors, reticent behaviors, rough-and-tumble play, and solitary-active behaviors. Using behavioral observations to support the construct validity of the measure, and parental and teacher ratings to establish the psychometric properties, Coplan and Rubin demonstrated that this teacher report measure has

potential to be an important accompaniment and/or replacement for more time-consuming behavioral observations.

Peer behavior nominations. In peer nomination procedures, children are asked to designate peers who engage in specific behaviors (e.g., “Who plays by themselves a lot of the time?”) (e.g., Crick & Grotpeter, 1995; McNeilly-Choque, et al., 1996). The strength of peer ratings of behavior is that children’s perceptions of others’ behavior is measured directly without being filtered through the eyes of adult teachers or observers. Because children react to others based on their interpretations of behavior (whether accurate or not), child representations of others is critical for the social adjustment of peers in the group at large.

As with teacher ratings, this approach is not without limitations. Disadvantages include (a) differences in children’s abilities to recall descriptions of various behaviors, including social withdrawn behavior, (b) biases in children’s interpretation of social behavior caused by existing group reputations of peers being judged, and (c) biases in attention and recall that may be a function of children’s gender-role stereotypes (see Younger, Schneider, & Daniels, 1991). These concerns are highlighted for preschool- and kindergarten-age children. As Hymel (1983) has cogently pointed out, young children’s friendships tend to fluctuate frequently as a function of reactions to specific events (e.g., fighting over a toy) or moods, resulting in on-again, off-again associations with peers. As a result, daily perceptions of other children’s behavior may vary as a function of most recent experiences with a peer.

Parents. Parents see their children’s behaviors in a variety of contexts; thus, they are in a position to provide a wide range of information. Further, parents may be more adept than peers at identifying a wide range of behaviors including less salient behavior such as social withdrawal.

However, parents (a) often describe their children in a positive light, in an attempt to (b) portray themselves in a socially desirable manner, and (c) are influenced by their perceptions of what their child's behavior is in comparison to what they would like it to be.

In summary, there are unique advantages and disadvantages associated with the use of parents, peers, teachers, and observers, respectively, as informants. It should be noted, that one of the most pervasive problems with each of the informants discussed above is the lack of many existing rating scale measures designed to directly assess social play. One notable exception discussed above is the *Preschool Play Behavior Scale* (Coplan & Rubin, 1998). Future work should be aimed at creating other measures, including parent rating scales and peer nomination techniques, designed specifically for the assessment of children's play behaviors.

Normative Developmental Patterns of Social and Non-Social Play

In developing the now familiar social participation categories noted earlier, Parten (1932) concluded that the typical 3-year-old was a solitary or parallel player, whereas the 5-year-old spent much more time whilst socially engaged. A closer examination of the literature has revealed a more complex set of conclusions (e.g., Barnes, 1971; Rubin et al., 1976; Rubin et al., 1978).

In contrast to toddlerhood, it is during the preschool period that social play becomes much more prominent. There is a substantial increase in the frequency of social contacts, and interactive events become longer, more elaborated, and more varied (Blurton-Jones, 1972; Eckerman, Whatley, & Kutz, 1975; Holmberg, 1980; Rubin et al., 1978). As well, preschoolers tend to play with a wider range of playmates than do toddlers (e.g., Howes, 1983).

Rubin, Watson, and Jambor (1978) reported that preschoolers (4-year-olds) engage in significantly more unoccupied, onlooker, and solitary play and in less group (i.e., associative or

cooperative) play than kindergarten children (5-year-olds). Developmental changes in the play of preschoolers were characterized by an increasing cognitive maturity of their solitary, parallel, and group interactive activities (e.g., Rubin, et al, 1978). Thus, while the relative frequency of functional (sensorimotor) play was found to be greater among preschool-aged children than among kindergartners, the relative incidence of the more mature forms of play (i.e., dramatic play and games-with-rules) was greater among kindergartners. The most frequently observed behavior during this two-year age period was constructive play; solitary-sensorimotor behaviors became increasing rare from preschool to kindergarten. More recent research has demonstrated that both the relative frequency and complexity of constructive activity continues to increase from the preschool to middle childhood period (Johnson, 1998).

Finally, kindergarten children have been observed to engage in more parallel-constructive, parallel-dramatic, and group-dramatic play than preschoolers. In addition, there is evidence of a decrease in the proportion of time spent in solitary-functional, and parallel-functional play (Rubin et al., 1978).

From early-to-middle childhood, the two forms of play activities that increase in prominence are sociodramatic play and games-with-rules. In early childhood, social-pretense serves to support and promote emotional and social development; it is especially significant in allowing children to find a niche within their relevant peer group. For older primary-grade children, collaborative pretense continues to serve these purposes and becomes especially important in the establishment and maintenance of intimate peer friendships (Howes et al., 1992).

Thus, it has been established that the social interactive activities of children become increasingly frequent and complex with age. However, not only do the social interactive activities

change with age, but the meanings of these activities, particularly socially withdrawn behaviors, change over time. Asendorpf (1993) has proposed, and found in studies of dyadic interaction, that with increasing age beyond the preschool years, reticent behavior gradually merges with solitary-passive behavior to yield a single construct of social withdrawal. According to Asendorpf, this increased statistical association between previously unassociated constructs represent the attempt of reticent children to cope constructively with their fearfulness and uncertainty by “losing themselves” in non-social play with objects (Asendorpf, 1991).

Asendorpf’s (1991, 1993) notions about the changing meaning of solitary behaviors coincide with Younger and colleagues’ data-driven reports that with increasing age, withdrawn behaviors become more salient to the peer group (e.g., Younger, Gentile & Burgess, 1993). It is also known that perceived deviation from age-normative social behavior is associated with the establishment of negative peer reputations. Thus, it has been suggested that the psychological meaning of passive-solitude changes, reflecting psychological uncertainty, negative self-appraisals, and insecurity in one's relationships.

In partial support for these conjectures, we recently reported that at age seven, children who were identified as both highly emotionally dysregulated and dispositionally unsociable displayed as much solitary-passive behavior as those unsociable children who were not emotionally dysregulated (Kennedy, Cheah, Rubin, & Fox, 1999). This finding supports the conjecture that at 7 years of age, emotionally dysregulated-unsociable children may have learned to mask their social anxieties by engaging in object-centered, quiescent and solitary behaviors. Importantly, those children identified as emotionally dysregulated but sociable demonstrated behaviors much like their 4-year-old counterparts (Rubin, Coplan, Fox, & Calkins, 1995); they

engaged in more disruptive behavior and rough-and-tumble-play, and were rated by their mothers as having more externalizing difficulties than did sociable children who were able to regulate their emotions.

It is also the case that researchers have found non-specific indices of social withdrawal in middle childhood (that is, measures that aggregate observed reticence and solitary passive behavior) to be associated with indices of internalizing problems (e.g., Hymel et al., 1990; Rubin, 1985; 1993; Rubin, Hymel, & Mills, 1989; Rubin, Chen, McDougall, Bowker, & McKinnon, 1995).

In summary, it seems clear that different forms of social and non-social play have different psychological "meanings". Moreover, the meanings of these behaviors change somewhat with age.

Origins of Social and Non-Social Play

Given the contemporaneous and long-term significance of social and non-social play, it would appear important to ask questions about their origins. It seems plausible to suggest that biological or dispositional factors (e.g., temperament) may influence the quality of children's play. It seems equally plausible that variability in the quality of children's play may be a function of parent-child relationships, as well as of their parent' socialization beliefs and behaviors. Finally, the interactive effects of temperament and parenting take place within a cultural context that may govern the meanings and production of play behaviors. In the following section we review dispositional, parenting and cultural factors that may influence children's social and non-social play.

Dispositional factors. Recently, Rubin, Coplan, Fox, and Calkins (1995) reported that a high frequency of reticent behavior was associated with the inability to regulate negative emotions. In keeping with a dispositional explanation for the frequent demonstration of reticent behavior, Fox and colleagues have shown that infants who display a pattern of stable right frontal EEG asymmetry are more fearful, anxious, compliant, and behaviorally inhibited as toddlers than other infants (Fox & Calkins, 1993). With preschoolers, it has been found that children who exhibit relatively high frequencies of social interaction and positive affect during free-play exhibit greater relative left frontal EEG activation. Children who display relatively high frequencies of reticence demonstrate greater right frontal EEG activation, suggesting that resting frontal asymmetry may be marker for certain temperamental dispositions (Fox et al., 1995).

In addition, Schmidt and Fox (1996) found that left frontal EEG activation at age 4-months was related to sociability, and maternal reports of social desirability during the second year of life. Toddlers who exhibited greater relative left frontal activation at 4-months-of-age displayed more behaviors indicative of sociability towards a stranger at 14 months-of-age than toddlers who earlier displayed greater relative right frontal activation. These data are consistent with recent findings linking individual differences in the pattern of frontal EEG activation asymmetry to the expression of positive and negative affect (Fox, Schmidt, Calkins, Rubin & Coplan, 1996).

For example, Fox and colleagues (Fox et al, 1996) found that preschoolers who were highly sociable in same-age, same-gender play quartets, and who exhibited greater relative right frontal EEG asymmetry were more likely to exhibit externalizing problems than sociable children who exhibited greater relative left frontal EEG asymmetry. Shy children who were reticent in the play quartet and exhibited greater relative right frontal EEG asymmetry however, were more likely

to exhibit internalizing problems than shy children who exhibited left frontal EEG asymmetry. These findings suggest that the pattern of frontal EEG asymmetry in combination with social behavioral style during play is a significant predictor of maladaptive behavior problems during the preschool period.

In addition, Schmidt, Fox, Rubin, Sternberg, Gold, Smith, & Schulkin (1997) recently found a positive relation between cortisol production in saliva and the demonstration of extremely inhibited behavior. It was suggested that corticotrophin-releasing hormones in the central nucleus of the amygdala may exacerbate socially fearful behaviors among peers. Still more recently, Tout, de Haan, Campbell, & Gunnar (1998) found a significant relation between social behavior and cortisol activity for boys, but not for girls. For boys, externalizing behavior was positively associated with cortisol reactivity, while internalizing behavior (of which POS recorded reticence was a marker) was negatively associated with median cortisol levels. Surprisingly, median cortisol levels rose from morning to afternoon, a pattern opposite to that of the typical circadian rhythm of cortisol. This rise in cortisol over the day was positively correlated with internalizing behaviors for boys.

Taken together, these findings suggest that preschoolers who display reticent behaviors have an underlying dispositional or biological “make-up” that may evoke feelings of dysregulated social anxiety when in social company. These feelings of anxiety, in turn, may preclude children from participating in play with others.

Parenting. Through parent-child interaction, children learn directly and indirectly, how to engage in various forms of play, including pretense (Haight, 1998). For example, after engaging in pretend activities with their mothers, children integrate their mothers’ pretend talk into their

play (Haight & Miller, 1992). Parents also influence the play of their children by virtue of the types of relationships they form with them. For example, the parent-child relationship may provide a secure base from which children can explore their physical and social surroundings. Preschoolers who have a history of a secure attachment relationship with their mothers are more likely, than their age-mates who are classified as “insecurely attached”, to demonstrate social initiations and competent social interactions in peer play (e.g., Booth, Rose-Krasnor, McKinnon, & Rubin, 1994).

Further, parents who exhibit behaviors characterized as involved, warm, and appropriately controlling tend to have children who are observed to engage in more cooperative play, while parents who are low in warmth, high in control, and frequently use power assertive disciplinary strategies have children who are more nonsocial in their play (e.g., Hart, DeWolf, & Burts, 1993; Hart, DeWolf, Wozniak, & Burts, 1992). After identifying, via observations, children who were highly withdrawn and average in social adaptation, Rubin and Mills (1990) found that mothers of withdrawn children were more likely than mothers of average children to believe that social skills should best be taught in a directive manner and that maladaptive behaviors should be responded to in a high-powered, coercive fashion. These mothers were also more likely than mothers of average children to indicate that they would feel guilty and embarrassed by displays of maladaptive behavior, and they attributed these behaviors to dispositional factors.

Finally, parents influence children’s play through their role as social ‘directors’. That is, they supervise, mediate, and arrange play opportunities for their children. Ladd and Golter (1988) reported that mothers who arranged child-peer engagements had preschoolers who (a) had a larger number of playmates, (b) had more consistent play companions in their informal non-school

networks, and (c) were better liked by their peers. Mothers who initiated peer activities were likely to have children who spent more time playing in peers' homes; this latter variable was associated with peer acceptance (Ladd, Hart, Wadsworth, & Golter, 1988). Finally, maternal tendencies to mediate (i.e., facilitate, scaffold) peer activities are related to child sociability during play (Hart, Yang, Nelson, Jin, Bazarskaya, & Nelson, 1999). From these findings, it would appear as if the parents' provision of opportunities for peer interaction and play help empower their children with the abilities to initiate and manage their own peer interactions.

In summary, differences in observed play behaviors of children are related to various aspects of the parent-child relationship including parent-child interaction, parent-child attachment, parenting beliefs, styles and behaviors.

Consequences of non-social play. As discussed above, social withdrawal has been found to be contemporaneously associated with several negative factors, including peer rejection, loneliness, internalizing disorders, and negative self-worth (e.g., Coplan & Rubin, 1998; Rubin, 1982; Rubin, Hymel, LeMare, & Rowden, 1989). However, the only longitudinal data extant pertaining to the long-term risk status of socially withdrawn, wary, reticent children stem from a handful of studies. For example, Rubin and colleagues followed forward a group of children from age 5 years to age 15 years. They reported that passive-withdrawal at five and seven years of age predicted self reported feelings of depression, loneliness and negative self-worth and teacher ratings of anxiety at age 11 years (Hymel et al., 1990; Rubin & Mills, 1988). In turn, social withdrawal at age 11 years predicted self reports of loneliness, depression, negative self-evaluations of social competence, feelings of not belonging to a peer group that could be

counted on for social support, and parental assessments of internalizing problems at age 15 years (Rubin, 1993; Rubin, Chen, McDougall, Bowker, McKinnon, 1995).

These latter findings have been augmented in recent reports from other studies. For example Renshaw and Brown (1993) found that passive-withdrawal at ages 9 to 12 years predicted loneliness assessed one year later. Morison and Masten (1991) indicated that children perceived by peers as withdrawn and isolated in middle childhood were more likely to think negatively of their social competencies and relationships in adolescence.

In summary, children who do not interact with their peers, including during play, appear to be at risk for contemporaneous difficulties and long-term maladaptive outcomes. Specifically, studies indicate that social withdrawal may be a risk factor for the development of internalizing problems.

Culture. What we know about the developmental significance of social and nonsocial play is constrained by the cultures in which we study these phenomena. Most, if not all, of the studies described thus far have been specific to Western cultures. We know little about the developmental progression of social and non-social play and its significance in non-Western cultures. Emerging data, however, give us reason to believe that culture plays a significant role in the expression of social and/or non-social play.

One obstacle in cross-cultural research is the potential bias inherent in the methods of assessment. For example, despite the recent surge in cross-cultural research, most studies have used 'Western' questionnaires to assess 'Westernized' beliefs, norms, and behaviors.

Cross-cultural researchers have questioned the wisdom of using the Western social science play literature to understand the meanings of child behavior in other subcultures and cultural settings

(see for example, Roopnarine & Carter, 1992; Soto & Negron, 1994). Importantly, few researchers have attempted to make direct, cross-cultural comparisons of behaviors using observational techniques. Using behavioral observations would minimize many social conventional biases found in questionnaire and rating scale data.

Of particular cross-cultural interest are behaviors, including play, that may be considered 'normal' in one culture but 'deviant' in another. For example, as we have shown, in Western cultures, passive, reticent behavior is viewed negatively by parents and peers alike. Yet in China, children are encouraged to be dependent, cautious, self-restrained, and behaviorally inhibited (Ho, 1986). Such behaviors are considered indices of accomplishment, mastery, and maturity (Feng, 1962; King & Bond, 1985). Similarly, shy, reticent, and quiet children are described as well-behaved. Indeed, socially reticent behavior is praised and encouraged (Ho, 1986). In support of these cultural notions, Chen, Hastings, Rubin, Chen, Cen, and Stewart (1998) found that observed child inhibition, at age two years was associated positively with mothers' punishment orientation and negatively with mothers' acceptance and encouragement of achievement in a Canadian sample; however, the relations were in the opposite direction in a Chinese sample. That is, child inhibition was associated positively with mother's warm and accepting attitudes and negatively with rejection and punishment orientation. These results indicate possible different adaptational meanings of behavioral inhibition across the two cultures, which may result in developmental differences in observed child behaviors. Indeed, socially inhibited behavior in China is positively associated with competent, prosocial behavior and with peer acceptance in childhood (Chen, Rubin, & Li, 1995; Chen, Rubin, & Sun, 1992).

While researchers have focused on latitudinal differences between Western (i.e., individualistic) vs. Eastern (i.e., pluralistic) cultures, there may also be longitude-differences in thinking and behaving. For example, most researchers who study adaptive and maladaptive behaviors from a cross-cultural perspective believe that the “meanings” of prosocial and aggressive behavior are similar in Chinese and Western cultures (Ho, 1986; King & Bond, 1985). In fact, in both cultures, sociability and cooperation in children are positively valued and encouraged whereas aggression is negatively perceived and prohibited (e.g., Chen & Rubin, 1992; Chen et al., 1995; Chen et al., 1992). There has been less research exploring the “meanings” of these behaviors in cultures varying in longitude. While most of the work that has been done has focused on aggression rather than sociability, a look at these findings reveals why we cannot simply assume that the ‘meanings’ of these behaviors are universal. For example, in some ‘southern’ cultures, it has been suggested that aggression is viewed somewhat more positively than in Eastern and Western cultures. In one study of Israeli boys, aggressiveness as rated by peers, was associated positively with sociability and leadership (Krispin, Sternberg, & Lamb, 1992). Similarly, in southern Italy, aggression has become increasingly accepted as a means to negotiate exchanges with others (Scarsia, 1961, 1966). Further, Corsaro and Rizzo (1990) found that Italian preschoolers engaged in more disputes than their American counterparts. Relatedly, Casiglia, LoCoco, and Zapulla (1998) have reported that children viewed by peers as aggressive were also viewed as social leaders. While there has been little work examining possible differences in the “meanings” of social and/or nonsocial play, this work on aggression demonstrates the need for future work in this area.

Taken together, the findings reported above suggest strongly that the cultural milieu and societal values may encourage or inhibit demonstrations of highly sociable or highly unsociable behavior. In studying intercultural and cultural variations in children's play, we can better recognize the unique cultural properties that are reflected in children's activities (Roopnarine, Lasker, Sacks, & Stores, 1998).

Summary and Conclusion

Summary and Conclusion Summary and Conclusion Summary and Conclusion Summary and Conclusion In this chapter, we have examined the constructs of children's social and non-social play. In particular, we have discussed the developmental significance of social play, and the potential risks associated with certain forms of non-social play. We reported that social play was associated with positive markers of both social (e.g., interpersonal problem-solving skills, perspective-taking skills, and group cooperation) and cognitive (e.g., reading and comprehension skills) competence. Similarly, solitary-passive behaviors were associated positively with competent problem solving, emotion regulation, and task persistence. Conversely, we outlined the numerous risk factors associated with other types of non-social play. For example, children who display social reticence experience internalizing problems and peer rejection; while children who display solitary-active behaviors tend to experience externalizing disorders and peer rejection.

Next we examined the advantages and disadvantages of various methods used to study children's interactions and play. In particular, we focused on behavioral observational methods of assessment used in the study of normative development, as well as causes, correlates, and consequences of individual differences in young children's social and non-social play. Finally, we discussed the origins of individual and group variability found in social and non-social play, including dispositional factors, parental influences, and cultural contexts. The research presented suggests that cultural milieus and societal values create a framework within which these different behaviors may be evaluated.

It is apparent that play is an important context within which children come to understand their interpersonal and intrapersonal worlds. By studying play, we begin to understand the

developmental significance, both positive and negative, of social and non-social activity in the lives of children.

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Figure 1:

Behavioral Categories on the Play Observation Scale

	time sample					
	1	2	3	4	5	6
transitional						
unoccupied						
onlooker						
solitary:						
constructive						
exploratory						
functional						
dramatic						
games						
parallel:						
constructive						
exploratory						
functional						
dramatic						
games						
group:						
constructive						
exploratory						
functional						

dramatic							
games							
peer conversation:							
<u>Double Coded Behaviors:</u>							
anxious behaviors							
hovering							
aggression							
rough-and-tumble							